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ABSTRACT

A study is reported in which several populations of both culturally deprived and culturally advantaged high school juniors and seniors were assessed on a standard measure of personality (Rotter's "locus of control") as well as several indices of personal aspirations and risk taking. Esentially, the paper asks: is there an interaction between locus of control and environmental milieu in predicting such educationally relevant variables as levels of aspiration and risk-taking increase. Using Rotter's internal-external control scale, the authors found no differences between the black, disadvantaged sample and the white advantaged samples. However, on the dependent variables (aspiration, risk-taking), significant differences were found between black and white internals, as well as between black and white externals. While acknowledging that several interpretations of the data are possible, the authors suggest that what characterizes internals, regardless of their life situation, is their understanding of their environment and their rational, adaptive reaction to it. A different slant to the variable "locus of control" is offered, one which takes into account the situation-personality interactions revealed in the data. (TL)

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Locus of Control and Levels of Aspiration In Black and White Children

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There is general agreement among most educational and sociological authorities that culturally impoverished environments have deleterious effects both on personality traits and on behaviors associated with or predicted by these traits. While there are sound reasons for believing that these assumptions are true, in reality the data base supporting these assumptions, especially from a psychological point of view, is not extensive with most of these conclusions arising from intuitive rather than empirical support. What would seem to be primarily lacking is sound research utilizing salient, reliable, and constructly valid variables that allow for comparisons between different social groups. The purpose of the study presented in this paper is to report one such research effort. In this paper a study will be reported where several populations of both culturally deprived and culturally advantaged students were assessed on a standard measure of personality as well as several indices of personal aspirations. The general purpose of this study was to assess the effect of the different environments studied on these variables. The specific purpose of the study was to ascertain how these predictor and criterion variables interrelate, and whether this relationship varies as a function of the environment in which both are tested.

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Perhaps the most salient variable that has received considerable basic and applied research attention in recent years (especially in educational settings)

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is the construct of locus of control, originally formulated by Rotter (1966). Locus of control is an expectancy variable that describes the perception of personal control that one has over the reinforcements that follow his behavior. In Rotter's thinking, an "internal" person perceives that he is in control of his fate and that effort and reward will be correlated. An "external" person perceives that powerful others or "the system" determine how well he can do, and that rewards are distributed by such powerful others in a random fashion. Using the I-E Scale, researchers have found that internal people: are more likely to make typical or rational shifts in their levels of aspiration (Battle and Rotter, 1963; Feather, 1968; Rotter and Mulry, 1965); take intermediate rather than extreme risks (DuCette and Wolk, 1972; Julian and Katz, 1961; Liverant and Scodel, 1960); are more confident in their abilities (Lao, 1970); make better use of environmental feedback (Phares, 1963; Ude and Vogler, 1971); and, are more likely to be social activists (Forward and Williams, 1970; Gore and Rotter, 1963). The general conclusion from this research is that, in most cases, "internality" is an adaptive and positive personality characteristic while "externality" is not. While it is clear that this statement must be qualified since current research has indicated this construct to be more complex than originally thought, the above attribution of internality as being more adaptive would generally hold. It is evident, however, that a distinction must be made between different types of internality, especially for minority groups (Gurin, Gurin, Lao and Beattie, 1970) and that no simple or linear relationship exists between internality and adaptive behavior (DuCette, Wolk and Soucar, 1972).

While the research using the locus of control construct in predicting the type of educationally relevant variables mentioned above (levels of aspiration, personal confidence, use of environmental information etc.) has been extensive, the moderating effect of different social environments upon these predictor-criterion relationships has not been substantial. The argument that we will

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present in this paper is that by failing to do such research social scientists have been led to misinterpret the effects of different environments on variables such as level of aspiration or risk-taking. We will argue that an expectancy for control (i.e., the personality variable of locus of control as measured by Rotter's I-E Scale) makes genotypically similar predictions across social milieus, despite phenotypic dissimilarities.

This is not to imply that such personality-situation interaction research has never been done, because several studies do exist where special attention has been placed on differential predictability of the internal-external dimension in varying social settings. The work of Gurin et. al. mentioned previously is a good example of such research, as well as several studies reported by Crandall and her associates (Crandall, Katkovsky and Crandall, 1965; McGhee and Crandall, 1967). Perhaps the best known example of such research is the Coleman Report (Coleman et. al., 1966) in which the internal-external dimension was utilized as a predictor of academic performance in both Black and White populations. Such research, though, is the exception rather than the rule. Perhaps more critical is the fact that even in the research cited there are certain methodological problems which restrict the generalizability of the findings. It is not common, for example, for a researcher to investigate identical dependent variables in different situational settings within the same study. Too often the findings of one researcher who has selected one particular social milieu to study are contrasted with the findings of another researcher who has utilized another population. Such comparisons are legitimate, of course, but they may suffer from a lack of actual comparability between the studies. It is also characteristic of such research

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that highly molar dependent variables such as overall academic performance or social activism have been studied. While such behaviors are undoubtedly more interesting than variables such as level of aspiration or risk-taking, the problem in studying them is that they are so highly overdetermined that the predictability from any one specific variable will be slight. For example, school adjustment is affected by so many subject characteristics (intelligence, achievement motivation, attitude toward school, etc.) that the effect of the internal-external dimension will probably be masked by the other variables. As a consequence, such research is not likely to contribute to the basic theoretical understanding of how the personality dimension of locus of control predicts such behavior in different environments.

In the present study an attempt has been made to overcome some of the methodological shortcomings in previous research by using the individual difference variable of locus of control as a predictor of behaviors in social milieus which differ markedly in characteristics salient to educational research. In order to avoid possible confounding variables several controls were employed: the samples were chosen so that all subjects were of the same age (only juniors and seniors in high school were utilized); an identical set of questions were asked to these subjects at approximately the same time; subject populations were chosen which unquestionably differed on the variables of interest (an all-Black, lower-class high school, an all-White, middle-class high school, and an all-White, college preparatory high school were used); and, dependent variables were chosen that retained theoretical interest while still being molecular enough so that the effect of locus of control would not be lost. The question of this paper then becomes: is there an interaction between locus of control and environmental milieu in predicting

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such educationally relevant variables as levels of aspiration and risk-taking.

Method

Subjects- The subjects in this study came from three high schools in or near a large metropolitan area. Only juniors and seniors were tested, this testing always being done in their regular classrooms. The descriptions of the high schools and the total number used in each are as follows:

High School I: (N= 289). This is an all-Black, ghetto school which draws its students from a neighborhood which is lower-class. Indeed, the students from this school come from the most impoverished neighborhood in this metropolitan area and the achievement data from this school are consistently among the lowest of the schools in this city.

High School II: (N= 192). This is a school situated in one of the nearest suburbs of the city. The students in this school are almost entirely White (90%) and their parents live in middle to lower-middle class neighborhoods. While these students are not as homogeneous as those described for school #1, it would be fair to describe most of them as middle-class. The achievement data from this school are at or slightly above the norm for the city's schools. For purposes of data analysis, all Black students from this school were eliminated from the subject pool.

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High School III: (N= 186). This is an all-White, college preparatory school in one of the most affluent suburbs of the city. These students were chosen to go to this school because of their achievement in the middle-school, and all are expected to go to college. Because of the extra cost involved in going to this school, all of the students would be described as middle-class or above. In all cases, the students were approximately evenly divided between males and females. Since this is a potentially confounding variable, the sexes were analyzed separately in the data analysis. Since no sex differences were found in any of the schools, the schools will be treated as separate entities with no attention paid to sex differences either within or between schools.

Procedure- The method employed in the three schools was always the same and involved two sessions. In the first session the students were given the internal-external control scale (Rotter, 1966) using the normal procedure and instructions. This is a 29 item test (with 6 fillers) and is scored in such a way that a high score represents an "external" person. The items involve the person's perception of the extent that luck and chance play a role in his life. For purposes of data analysis, the scores from this test were ranked across all subjects and a split was made at 9 and below (internals) and 13 and above (externals). This procedure is fairly common in the literature as it allows comparison of groups which are clearly different on this test.

The second session followed the first by a period of approximately two weeks and involved administering to the students a questionnaire involving two types of dependent variables. The first variable involved the students' occupational aspirations. The students were presented with five levels of jobs ranging from a menial, unskilled job (level 1) to a professional job with high status (level 5). Appropriate scales were devised for males and females in which the 5 separate levels represented were equated for the two sexes. As mentioned above, no differences

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were found between the two sexes, indicating that the two scales were in fact similar. The students were asked what job he (or she) thought a person like himself could possibly attain in our society, a variable we will call job estimation. After this the students were asked what job they would prefer to have as a life's career, a variable we will term job preferance.

After this was completed, the students were asked to role-play an experiment that involved an attempt to solve a puzzle. The present authors have used this technique elsewhere (DuCette and Wolk, 1972) and have argued for the value of using such role-playing techniques in locus of control research. The five puzzles were described as ranging from very easy (90 out of 100 students could do it) to very difficult (10 out of 100 can do it). The students were first asked to indicate whether they thought they could do each puzzle (puzzle estimation) and were then asked to choose one puzzle that they would want to try to solve (puzzle preference). After this they were asked to imagine that they had chosen puzzle #3, and had successfully solved it. They were then asked to choose another puzzle, given the initial success with the one of intermediate difficulty. In such a case, the typical or rational shift in level of aspiration is to choose either the 4th or 5th puzzle. The data for analysis, therefore, contain two types of estimations of personal competence (occupational and cognitive), two preference variables (which might be viewed also as risk-taking variables), and a measure of shifts in level of aspiration following success.

Results

Presented in Table 1 are the means and standard deviations of the locus of control scores for each high school. Also included are the numbers of students that will be analyzed using the 9 and below and 13 and above criterion.

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Table 1

It in interesting to note that none of the high schools differ significantly on the independent variables in any manner (means, standard deviations or percentage characterized as internal or external). This will be discussed later.

Since all of the dependent variables can best be conceptualized as utilizing nominal scales and since the locus of control dimension was also nominalized, the appropriate statistical technique is a chi square. The five dependent variables of interest will be presented by high school with the resulting computed chi square. Since the pattern of these results is almost always the same for the different dependent variables, all five will be presented simultaneously. Table 2 contains the data for occupational estimation, table 3 for occupational preference, table 4 for cognitive estimation, table 5 for cognitive preference and table 6 for shifts in level of aspiration. In every case, the numbers in the tables represent the number of internal or external Ss who chose that option.

Tables 2, 3, 4, 5, & 6

It can be seen that the above results present a fairly clear picture. Specifically, in every case except one (puzzle preference) high schools 1 and 2 produce significant differences between internal and external Ss which, in every case, are exactly opposite for the two schools. Secondly, in high school #3, internal and external students never significantly differ from each other in any of the dependent variables. It is to the methodological and theoretical significance of these results that we will now turn.

Discussion

In looking at the data presented above, it is clear that two types of conclusions could be generated. One would attempt to show how the individual

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difference variable means different things for different people depending on their environment. In this case it would follow that in some way the White internal is essentially the same as the Black external. The other conclusion would attempt to show that the internal (or external) person does not differ as a function of social setting but instead acts the same in that both follow some deeper rule. It will be the second alternative that we will follow in our discussion. It will be our purpose in this discussion to show that the apparent discrepancies in the pattern of results for internal and external Ss in the different high schools are not, in reality, inconsistent at all. The point we will defend is that the individual difference variable of locus of control is making exactly the same genotypic prediction regardless of social setting, and that it is the phenotypic variance that is misleading. While we recognize that the alternative conceptualization is equally likely, and that our data cannot in themselves support either conclusion, we will try at the end to show why the second alternative is potentially the better one. The generation of such integrating hypotheses, that attempt to explain discrepant findings across social milieus, would seem to be the most valuable result of the type of situational-personality interaction research that we have proposed in this paper. Before turning to this, however, there are several methodological issues that need to be reviewed.

As mentioned previously, one important aspect of the data from the three high schools is that there were no differences in the independent variable. This is interesting primarily because previous thinking in this area would have argued for greater externality in the lower-class, Black high school. Our data do not support this, and indicate that previous hypotheses concerning locus of control in varying social settings may have been over-simplified. Even though there were no differences in the independent variable, however, there were striking differences in the dependent variables. The most obvious methodological aspect of these differences that is relevant to this type of research is the extreme

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lack of variance for all of the dependent variables in school #3. The methodological point is clear: it is impossible to systematically relate a predictor to a criterion when either of these have no variance. In this case, the variance of the predictor in school #3 was adequate (as a matter of fact, it was greater than for the other two schools); the problem was in the variables being predicted, since all of the students acted about the same. In this particular case, it would seem that the specific set of dependent variables chosen in this study are simply not salient for college-preparatory students. All of them are confident in their abilities, all prefer difficult tasks and all (97.7% at least) make typical shifts in level of aspiration. It is probably the case that for these students the environment so strongly determines their responses to the particular questions that we have asked that no residual variance is left to be accounted for. This does not mean that another set of questions would not have produced some variance, or that locus of control is an irrelavant dimension for these students. Our data merely imply that our questions do not allow variance in behavior for these students. This would seem to be important enough to be recognized as a possible reason why it is often difficult to replicate findings in different settings. While this methodological point is an important one, the major focus of this discussion will be on the meaning of the different patterns of results in the different populations. In attempting to understand why locus of control makes such different predictions, the interaction between situations and personality can perhaps be better understood.

Our attention will first be focused on the differences between schools #1 and #2. In these schools, the individual difference variable consistently differentiated between the behaviors of the two groups who differed in their perception of control, however, the pattern of results in the two schools was essentially opposite. An internal black adolescent has lower occupational and cognitive estimations, prefers

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less difficult tasks and makes more atypical shifts in level of aspiration than his external counterpart. The White internal adolescent, on the other hand, differs from his external peer in exactly the opposite manner-- he is more confident, will attempt harder tasks and raises his level of aspiration after success, all behaviors which are much less characteristic of the external in this social setting. Do these findings, then, mean that "internality" or "externality" must be defined differently as a function of the social milieu in which the individual resides. Our answer is no. Instead we will contend that both groups are acting exactly the same, and that locus of control is making exactly the same predictions, given the environment in which these internals or externals live. Our hypothesis is that the most parsimonious explanation of the behavior of the internal student, regardless of social setting, is that he is acting rationally and responding correctly in an environment which he accurately perceives. The external student, on the other hand, because he does not perceive the environment veridically, acts in a manner which is for him incorrect and essentially irrational. To demonstrate this we will review the dependent variables studied to show how the internal student responds realistically while the external responds unrealistically to the questions asked.

Perhaps the clearest case is in regard to the data for occupational estimation and preference. Given the questions asked, the realistic answer for a Black adolescent is to assume that the best job possible for him in our society is one with low status. Most adolescents similar to him will not become professionals and it is realistic and defensive for him to both perceive this fact and to choose for his life's career a job that he probably will attain. This admittedly might be viewed as pessimism or as a lack of

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hope in the future. In this case, however, is not pessimism also realism; is it not an accurate reading of the environment in the sense that the internal Black student knows that most likely no amount of effort will result in his becoming a professional? It is the external in this case who responds "hopefully" to the questions by stating that he perceives his potential career as being in the professions. Is not such hope unrealistic, irrational and potentially non-adaptive? On the other hand, the White, middle-class adolescent has a much better chance of becoming a professional if he tries. If such a student is an internal he perceives that such effort will result in this reward and he rationally chooses more difficult jobs as the ones he hopes to attain. The external does not perceive this and distributes his choice of potential jobs more equally across the five alternatives. This is not a realistic pattern, given the environment in which these students live.

Essentially the same analysis can be applied to the other behaviors sampled in this study. When presented with puzzles of varying difficulty, the Black internal realistically perceives that he will most likely only be able to perform the easy to moderately difficult ones. After all, given a history of taking standardized tests and performing academic tasks in competetion with White students, he has usually not been inordinately successful. Even when he has been told that he has been successful at a puzzle, he realistically assumes that this "performance" was probably about as good as he could do, and that the way to maximize the chances of success in the future is to try a less difficult task. For the Black adolescent, the "atypical" shift in this case may not be irrational at all. For the White adolescent, lowering one's aspiration after success is irrational since he should assume from past behavior that he can perform academic tasks of this type.

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In the strictest sense, then, what we are arguing for in this paper is a more complex defintiion of the construct of locus of control. An "internal" person does not simply perceive that the environment can be controlled; instead he accurately perceives whether the environment can be controlled and then responds to this perception with appropriate behavior. Such a reinterpretation implies that the genotypic consequences of an internal or external orientation are always the same but that the prediction of behavior from this individual difference variable must take into account what is rational for the individual in his environment. That is, it may be accurate and adaptive for a Black adolescent to perceive that he is not completely master of his fate and that the correlation between action and reward, for him, is not strong. It would seem, however, that such an accurate perception of reality should have, in the long run, positive and adaptive consequences. The internal Black adolescent, just as his internal White counterpart, understands his environment and acts in the most rational manner to its demands and within its restrictions. Should it not follow that the consequences of such behavior would be to maximize the potential correlation between effort and reward? Although this potential correlation is probably lower for the Black adolescent than for the White, the internal student in both milieus will still be the one who obtains from his environment the most it will allow.

There is, of course, an alternative explanation of these data which would seem to be the one more currently held. This interpretation implies that the internal-external dimension is in fact different for different people as a function of social setting and that the Black internal is generally like the White external and vice versa. These arguments are typically based of data which look much like our data; i.e., Black externals generally act

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more like White internals (for example, are more politically active and have better self-concepts) than like White externals. This argument is equally plausible to the one we have presented in this paper and would seem to require less extrapolation beyond the data than the alternative we have proposed. On the other hand, most of these arguments (Gurin et. al.,1969; Lao, 1970) have required some manipulation or reworking of the I-E Scale (by factor analyzing it, for example, or by using only one subset of the questions from the test) to prove their points. It would seem legitimate to question the comparability of such research to the original I-E Scale or to the meaning of the internal-external dimension as originally discussed by Rotter. The strength of our argument would seem to be that only one definition of the construct of locus of control is required rather than several. By our hypothesis an "internal" person acts the same regardless of the social setting in which he finds himself. If personality variables are to have any meaning, it would seem that they should act in this way.

Our purpose in writing this paper was to explore the moderating influences of different environments on the relationship between a psychological predictor and educationally relevant variables. By measuring an individual difference variable is different social milieus, we have found that this variable makes strikingly different predictions in different settings. Whatever the reason for these different predictions might be, it would seem that the case for doing such research is strongly supported. Only by specifically looking at situation-personality interactions can the dynamics of such interactions be understood. Our findings have led us to modify the defintion of the individual difference variable that was utilized. Whether this reinterpretation is justified is perhaps less important than the fact that only by such research can progress be made in understanding both situational and personality effects on behavior, and the interaction between the two.

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Table 1

Mean and Standard Deviations of LOC scores, and N's by High School

	Mean LOC	S.D.	Total N	Internal (9 & below)	External (13 & above)
School #1	11.05	3.27	289	86	89
School #2	11.22	4.09	192	55	57
School #3	11.26	4.31	186	59	53

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Table 2

Distribution of Choices for Occupational Estimation by Internal-External Ss and Schools

		1	2	3	4	5	
School #1	In	19	14	22	13	18	$\chi^2 = 39.41$ $p < .001$
	Ex	3	1	13	25	47	
School #2	In	2	6	25	17	5	$\chi^2 = 10.20$ $p < .05$
	Ex	7	9	19	9	13	
School #3	In	0	0	4	26	29	$\chi^2 = 1.48$ n.s.
	Ex	0	1	5	25	22	

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Table 3

Distribution of Choices for Occupational Preference by Internal-External Ss and Schools

		1	2	3	4	5	
School #1	In	21	13	18	16	18	$X^2 = 15.60$ p<.01
	Ex	5	9	17	23	35	
School #2	In	0	4	19	15	17	$X^2 = 18.02$ p<.01
	Ex	9	9	13	20	6	
School #3	In	0	2	3	8	46	$X^2 = 4.82$ n.s.
	Ex	0	0	5	11	37	

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Table 4

Distribution of Choices for Cognitive Estimation by Internal-External Ss and Schools

		1	2	3	4	5	
School #1	In	7	8	33	19	19	$X^2 = 16.06$ $p < .01$
	Ex	0	4	26	39	20	
School #2	In	1	3	31	15	5	$X^2 = 12.74$ $p < .05$
	Ex	8	11	22	10	6	
School #3	In	0	0	16	29	14	$X^2 = 4.50$ n.s.
	Ex	0	1	14	18	20	

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Table 5

Distribution of Choices for Cognitive Preference by Internal-External Ss and Schools

		1	2	3	4	5	
School #1	In	18	19	23	12	14	X^2= 18.26 p<.01
	Ex	5	7	34	19	24	
School #2	In	2	4	14	20	15	X^2= 2.43 n.s.
	Ex	4	7	18	17	11	
School #3	In	0	0	15	27	17	X^2= 3.48 n.s.
	Ex	3	0	12	21	17	

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Table 6

Distribution of Choices for
Shifts in Level of Aspiration by Internal-
External Ss and Schools

		(Atypical)		(Typical)		
		1	2	4	5	
School #1	In	17	31	24	14	$X^2 = 26.26$ $p<.001$
	Ex	2	14	51	22	
School #2	In	2	1	36	16	$X^2 = 23.26$ $p<.001$
	Ex	7	18	20	12	
School #3	In	1	0	40	18	$X^2 = 1.53$ n.s.
	Ex	1	1	38	13	

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References

Battle, E. S. & Rotter, J. B. Children's feelings of personal control as related to social class and ethnic group. Journal of Personality, 1963, 31, 482-490.

Coleman, J. S., Campbell, E. Q., Hobson, C. J., McPartland, J., Mood, A. M., Wernfeld, F. D. & York, R. L. Equality of Educational Opportunity. Superintendent of Documents, Catalog No. FS5.238: 38001. Washington, D. C.: Government Printing Office, 1966.

Crandall, V. J., Katkousky, W. & Crandall, V. J. Children's beliefs in their own control of reinforcements in intellectual-academic achievement situations. Child Development, 1965, 36, 91-109.

DuCette, J. P. & Wolk, S. Locus of control and extreme behavior. Journal of Consulting and Clinical Psychology, in press.

DuCette, J. P., Wolk, S. & Soucar, E. Atypical patterns in locus of control and maladjustive behavior. Journal of Personality, in press.

Feather, N. T. Change in confidence following success or failure as a predictor of subsequent performance. Journal of Personality and Social Psychology, 1968, 9, 38-46.

Forward, J. R., & Williams, J. R. Internal-external control and black miltancy. Journal of Social Issues, 1970, 26, 75-91.

Gore, P. M. & Rotter, J. B. A personality correlate of social action. Journal of Personality, 1963, 31, 58-64.

Gurin, P., Gurin, G., Lao, R. C. & Beattie, M. Internal-external control in the motivational dynamics of Negro youth. Journal of Social Issues, 1969, 25, 29-63.

Julian, J. W., & Katz, S. B. Internal versus external control and the value of reinforcement. Journal of Personality and Social Psychology, 1968, Vol. 8, No. 1, 89-94.

Lao, R. C. Internal-external control and competent and innovative behavior among Negro college students. Journal of Personality and Social Psychology, 1970, Vol. 14, No. 3, 263-270.

Liverant, S., & Scodel, A. Internal and external control as determinants of decision making under conditions of risk. Psychology Reports, 1960, 7, 59-67.

McGhee, P. E. & Crandall, V. C. Beliefs in internal-external control of reinforcements and academic performance. Child Development, 1968, 39, 91-102.

Phares, E. J. Expectancy changes in skill and chance situations. Journal of Abnormal and Social Psychology, 1957, 54, 339-342.

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Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 1966, 80, No. 1 (Whole No. 609).

Rotter, J. B., & Mulry, R. C. Internal versus external control of reinforcement and decision time. Journal of Personality and Social Psychology, 1965, 2, 598-604.

Ryde, L. K. & Vogler, R. E. Internal versus external control of reinforcement and awareness in a conditioning task. The Journal of Psychology, 1969, 73, 63-67.

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There is general agreement among most educational and sociological authorities that culturally impoverished environments have deleterious effects both on personality traits and on behaviors associated with or predicted by these traits. While there are sound reasons for believing that these assumptions are true, in reality the data base supporting these assumptions, especially from a psychological point of view, is not extensive with most of these conclusions arising from intuitive rather than empirical support. What would seem to be primarily lacking is sound research utilizing salient, reliable, and constructly valid variables that allow for comparisons between different social groups. The purpose of the study presented in this paper is to report one such research effort. In this paper a study will be reported where several populations of both culturally deprived and culturally advantaged students were assessed on a standard measure of personality as well as several indices of personal aspirations. The general purpose of this study was to assess the effect of the different environments studied on these variables. The specific purpose of the study was to ascertain how these predictor and criterion variables interrelate, and whether this relationship varies as a function of the environment in which both are tested.

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Perhaps the most salient variable that has received considerable basic and applied research attention in recent years (especially in educational settings)

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is the construct of locus of control, originally formulated by Rotter (1966). Locus of control is an expectancy variable that describes the perception of personal control that one has over the reinforcements that follow his behavior. In Rotter's thinking, an "internal" person perceives that he is in control of his fate and that effort and reward will be correlated. An "external" person perceives that powerful others or "the system" determine how well he can do, and that rewards are distributed by such powerful others in a random fashion. Using the I-E Scale, researchers have found that internal people: are more likely to make typical or rational shifts in their levels of aspiration (Battle and Rotter, 1965; Feather, 1968; Rotter and Mulry, 1965); take intermediate rather than extreme risks (DuCette and Wolk, 1972; Julian and Katz, 1961; Liverant and Scodel, 1960); are more confident in their abilities (Lao, 1970); make better use of environmental feedback (Phares, 1963; Ude and Vogler, 1971); and, are more likely to be social activists (Forward and Williams, 1970; Gore and Rotter, 1963). The general conclusion from this research is that, in most cases, "internality" is an adaptive and positive personality characteristic while "externality" is not. While it is clear that this statement must be qualified since current research has indicated this construct to be more complex than originally thought, the above attribution of internality as being more adaptive would generally hold. It is evident, however, that a distinction must be made between different types of internality, especially for minority groups (Gurin, Gurin, Lao and Beattie, 1970) and that no simple or linear relationship exists between internality and adaptive behavior (DuCette, Wolk and Soucar, 1972).

While the research using the locus of control construct in predicting the type of educationally relevant variables mentioned above (levels of aspiration, personal confidence, use of environmental information etc.) has been extensive, the moderating effect of different social environments upon these predictor-criterion relationships has not been substantial. The argument that we will

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present in this paper is that by failing to do such research social scientists have been led to misinterpret the effects of different environments on variables such as level of aspiration or risk-taking. We will argue that an expectancy for control (i.e., the personality variable of locus of control as measured by Rotter's I-E Scale) makes genotypically similar predictions across social milieus, despite phenotypic dissimilarities.

This is not to imply that such personality-situation interaction research has never been done, because several studies do exist where special attention has been placed on differential predictability of the internal-external dimension in varying social settings. The work of Gurin et. al. mentioned previously is a good example of such research, as well as several studies reported by Crandall and her associates (Crandall, Katkovsky and Crandall, 1965; McGhee and Crandall, 1967). Perhaps the best known example of such research is the Coleman Report (Coleman et. al., 1966) in which the internal-external dimension was utilized as a predictor of academic performance in both Black and White populations. Such research, though, is the exception rather than the rule. Perhaps more critical is the fact that even in the research cited there are certain methodological problems which restrict the generalizability of the findings. It is not common, for example, for a researcher to investigate identical dependent variables in different situational settings within the same study. Too often the findings of one researcher who has selected one particular social milieu to study are contrasted with the findings of another researcher who has utilized another population. Such comparisons are legitimate, of course, but they may suffer from a lack of actual comparability between the studies. It is also characteristic of such research

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that highly molar dependent variables such as overall academic performance or social activism have been studied. While such behaviors are undoubtedly more interesting than variables such as level of aspiration or risk-taking, the problem in studying them is that they are so highly overdetermined that the predictability from any one specific variable will be slight. For example, school adjustment is affected by so many subject characteristics (intelligence, achievement motivation, attitude toward school, etc.) that the effect of the internal-external dimension will probably be masked by the other variables. As a consequence, such research is not likely to contribute to the basic theoretical understanding of how the personality dimension of locus of control predicts such behavior in different environments.

In the present study an attempt has been made to overcome some of the methodological shortcomings in previous research by using the individual difference variable of locus of control as a predictor of behaviors in social milieus which differ markedly in characteristics salient to educational research. In order to avoid possible confounding variables several controls were employed: the samples were chosen so that all subjects were of the same age (only juniors and seniors in high school were utilized); an identical set of questions were asked to these subjects at approximately the same time; subject populations were chosen which unquestionably differed on the variables of interest (an all-Black, lower-class high school, an all-White, middle-class high school, and an all-White, college preparatory high school were used); and, dependent variables were chosen that retained theoretical interest while still being molecular enough so that the effect of locus of control would not be lost. The question of this paper then becomes: is there an interaction between locus of control and environmental milieu in predicting

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such educationally relevant variables as levels of aspiration and risk-taking.

Method

Subjects- The subjects in this study came from three high schools in or near a large metropolitan area. Only juniors and seniors were tested, this testing always being done in their regular classrooms. The descriptions of the high schools and the total number used in each are as follows:

High School I: (N= 289). This is an all-Black, ghetto school which draws its students from a neighborhood which is lower-class. Indeed, the students from this school come from the most impoverished neighborhood in this metropolitan area and the achievement data from this school are consistently among the lowest of the schools in this city.

High School II: (N= 192). This is a school situated in one of the nearest suburbs of the city. The students in this school are almost entirely White (90%) and their parents live in middle to lower-middle class neighborhoods. While these students are not as homogeneous as those described for school #1, it would be fair to describe most of them as middle-class. The achievement data from this school are at or slightly above the norm for the city's schools. For purposes of data analysis, all Black students from this school were eliminated from the subject pool.

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High School III: (N= 186). This is an all-White, college preparatory school in one of the most affluent suburbs of the city. These students were chosen to go to this school because of their achievement in the middle-school, and all are expected to go to college. Because of the extra cost involved in going to this school, all of the students would be described as middle-class or above. In all cases, the students were approximately evenly divided between males and females. Since this is a potentially confounding variable, the sexes were analyzed separately in the data analysis. Since no sex differences were found in any of the schools, the schools will be treated as separate entities with no attention paid to sex differences either within or between schools.

Procedure- The method employed in the three schools was always the same and involved two sessions. In the first session the students were given the internal-external control scale (Rotter, 1966) using the normal procedure and instructions. This is a 29 item test (with 6 fillers) and is scored in such a way that a high score represents an "external" person. The items involve the person's perception of the extent that luck and chance play a role in his life. For purposes of data analysis, the scores from this test were ranked across all subjects and a split was made at 9 and below (internals) and 13 and above (externals). This procedure is fairly common in the literature as it allows comparison of groups which are clearly different on this test.

The second session followed the first by a period of approximately two weeks and involved administering to the students a questionnaire involving two types of dependent variables. The first variable involved the students' occupational aspirations. The students were presented with five levels of jobs ranging from a menial, unskilled job (level 1) to a professional job with high status (level 5). Appropriate scales were devised for males and females in which the 5 separate levels represented were equated for the two sexes. As mentioned above, no differences

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were found between the two sexes, indicating that the two scales were in fact similar. The students were asked what job he (or she) thought a person like himself could possibly attain in our society, a variable we will call job estimation. After this the students were asked what job they would prefer to have as a life's career, a variable we will term job preferance.

After this was completed, the students were asked to role-play an experiment that involved an attempt to solve a puzzle. The present authors have used this technique elsewhere (DuCette and Wolk, 1972) and have argued for the value of using such role-playing techniques in locus of control research. The five puzzles were described as ranging from very easy (90 out of 100 students could do it) to very difficult (10 out of 100 can do it). The students were first asked to indicate whether they thought they could do each puzzle (puzzle estimation) and were then asked to choose one puzzle that they would want to try to solve (puzzle preference). After this they were asked to imagine that they had chosen puzzle #3, and had successfully solved it. They were then asked to choose another puzzle, given the initial success with the one of intermediate difficulty. In such a case, the typical or rational shift in level of aspiration is to choose either the 4th or 5th puzzle. The data for analysis, therefore, contain two types of estimations of personal competence (occupational and cognitive), two preference variables (which might be viewed also as risk-taking variables), and a measure of shifts in level of aspiration following success.

Results

Presented in Table 1 are the means and standard deviations of the locus of control scores for each high school. Also included are the numbers of students that will be analyzed using the 9 and below and 13 and above criterion.

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Table 1

It in interesting to note that none of the high schools differ significantly on the independent variables in any manner (means, standard deviations or percentage characterized as internal or external). This will be discussed later.

Since all of the dependent variables can best be conceptualized as utilizing nominal scales and since the locus of control dimension was also nominalized, the appropriate statistical technique is a chi square. The five dependent variables of interest will be presented by high school with the resulting computed chi square. Since the pattern of these results is almost always the same for the different dependent variables, all five will be presented simultaneously. Table 2 contains the data for occupational estimation, table 3 for occupational preference, table 4 for cognitive estimation, table 5 for cognitive preference and table 6 for shifts in level of aspiration. In every case, the numbers in the tables represent the number of internal or external Ss who chose that option.

Tables 2, 3, 4, 5, & 6

It can be seen that the above results present a fairly clear picture. Specifically, in every case except one (puzzle preference) high schools 1 and 2 produce significant differences between internal and external Ss which, in every case, are exactly opposite for the two schools. Secondly, in high school #3, internal and external students never significantly differ from each other in any of the dependent variables. It is to the methodological and theoretical significance of these results that we will now turn.

Discussion

In looking at the data presented above, it is clear that two types of conclusions could be generated. One would attempt to show how the individual

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difference variable means different things for different people depending on their environment. In this case it would follow that in some way the White internal is essentially the same as the Black external. The other conclusion would attempt to show that the internal (or external) person does not differ as a function of social setting but instead acts the same in that both follow some deeper rule. It will be the second alternative that we will follow in our discussion. It will be our purpose in this discussion to show that the apparent discrepancies in the pattern of results for internal and external Ss in the different high schools are not, in reality, inconsistent at all. The point we will defend is that the individual difference variable of locus of control is making exactly the same genotypic prediction regardless of social setting, and that it is the phenotypic variance that is misleading. While we recognize that the alternative conceptualization is equally likely, and that our data cannot in themselves support either conclusion, we will try at the end to show why the second alternative is potentially the better one. The generation of such integrating hypotheses, that attempt to explain discrepant findings across social milieus, would seem to be the most valuable result of the type of situational-personality interaction research that we have proposed in this paper. Before turning to this, however, there are several methodological issues that need to be reviewed.

As mentioned previously, one important aspect of the data from the three high schools is that there were no differences in the independent variable. This is interesting primarily because previous thinking in this area would have argued for greater externality in the lower-class, Black high school. Our data do not support this, and indicate that previous hypotheses concerning locus of control in varying social settings may have been over-simplified. Even though there were no differences in the independent variable, however, there were striking differences in the dependent variables. The most obvious methodological aspect of these differences that is relevant to this type of research is the extreme

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lack of variance for all of the dependent variables in school #3. The methodological point is clear: it is impossible to systematically relate a predictor to a criterion when either of these have no variance. In this case, the variance of the predictor in school #3 was adequate (as a matter of fact, it was greater than for the other two schools); the problem was in the variables being predicted, since all of the students acted about the same. In this particular case, it would seem that the specific set of dependent variables chosen in this study are simply not salient for college-preparatory students. All of them are confident in their abilities, all prefer difficult tasks and all (97.2% at least) make typical shifts in level of aspiration. It is probably the case that for these students the environment so strongly determines their responses to the particular questions that we have asked that no residual variance is left to be accounted for. This does not mean that another set of questions would not have produced some variance, or that locus of control is an irrelavant dimension for these students. Our data merely imply that our questions do not allow variance in behavior for these students. This would seem to be important enough to be recognized as a possible reason why it is often difficult to replicate findings in different settings. While this methodological point is an important one, the major focus of this discussion will be on the meaning of the different patterns of results in the different populations. In attempting to understand why locus of control makes such different predictions, the interaction between situations and personality can perhaps be better understood.

Our attention will first be focused on the differences between schools #1 and #2. In these schools, the individual difference variable consistently differentiated between the behaviors of the two groups who differed in their perception of control; however, the pattern of results in the two schools was essentially opposite. An internal Black adolescent has lower occupational and cognitive estimations, prefers

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less difficult tasks and makes more atypical shifts in level of aspiration than his external counterpart. The white internal adolescent, on the other hand, differs from his external peer in exactly the opposite manner-- he is more confident, will attempt harder tasks and raises his level of aspiration after success, all behaviors which are much less characteristic of the external in this social setting. Do these findings, then, mean that "internality" or "externality" must be defined differently as a function of the social milieu in which the individual resides. Our answer is no. Instead we will contend that both groups are acting exactly the same, and that locus of control is making exactly the same predictions, given the environment in which these internals or externals live. Our hypothesis is that the most parsimonious explanation of the behavior of the internal student, regardless of social setting, is that he is acting rationally and responding correctly in an environment which he accurately perceives. The external student, on the other hand, because he does not perceive the environment veridically, acts in a manner which is for him incorrect and essentially irrational. To demonstrate this we will review the dependent variables studied to show how the internal student responds realistically while the external responds unrealistically to the questions asked.

Perhaps the clearest case is in regard to the data for occupational estimation and preference. Given the questions asked, the realistic answer for a Black adolescent is to assume that the best job possible for him in our society is one with low status. Most adolescents similar to him will not become professionals and it is realistic and defensive for him to both perceive this fact and to choose for his life's career a job that he probably will attain. This admittedly might be viewed as pessimism or as a lack of

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hope in the future. In this case, however, is not pessimism also realism; is it not an accurate reading of the environment in the sense that the internal Black student knows that most likely no amount of effort will result in his becoming a professional? It is the external in this case who responds "hopefully" to the questions by stating that he perceives his potential career as being in the professions. Is not such hope unrealistic, irrational and potentially non-adaptive? On the other hand, the White, middle-class adolescent has a much better chance of becoming a professional if he tries. If such a student is an internal he perceives that such effort will result in this reward and he rationally chooses more difficult jobs as the ones he hopes to attain. The external does not perceive this and distributes his choice of potential jobs more equally across the five alternatives. This is not a realistic pattern, given the environment in which these students live.

Essentially the same analysis can be applied to the other behaviors sampled in this study. When presented with puzzles of varying difficulty, the Black internal realistically perceives that he will most likely only be able to perform the easy to moderately difficult ones. After all, given a history of taking standardized tests and performing academic tasks in competetion with White students, he has usually not been inordinately successful. Even when he has been told that he has been successful at a puzzle, he realistically assumes that this "performance" was probably about as good as he could do, and that the way to maximize the chances of success in the future is to try a less difficult task. For the Black adolescent, the "atypical" shift in this case may not be irrational at all. For the White adolescent, lowering one's aspiration after success is irrational since he should assume from past behavior that he can perform academic tasks of this type.

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In the strictest sense, then, what we are arguing for in this paper is a more complex defintiion of the construct of locus of control. An "internal" person does not simply perceive that the environment can be controlled; instead he accurately perceives whether the environment can be controlled and then responds to this perception with appropriate behavior. Such a reinterpretation implies that the genotypic consequences of an internal or external orientation are always the same but that the prediction of behavior from this individual difference variable must take into account what is rational for the individual in his environment. That is, it may be accurate and adaptive for a Black adolescent to perceive that he is not completely master of his fate and that the correlation between action and reward, for him, is not strong. It would seem, however, that such an accurate perception of reality should have, in the long run, positive and adaptive consequences. The internal Black adolescent, just as his internal White counterpart, understands his environment and acts in the most rational manner to its demands and within its restrictions. Should it not follow that the consequences of such behavior would be to maximize the potential correlation between effort and reward? Although this potential correlation is probably lower for the Black adolescent than for the White, the internal student in both milieus will still be the one who obtains from his environment the most it will allow.

There is, of course, an alternative explanation of these data which would seem to be the one more currently held. This interpretation implies that the internal-external dimension is in fact different for different people as a function of social setting and that the Black internal is generally like the White external and vice versa. These arguments are typically based of data which look much like our data; i.e., Black externals generally act

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more like White internals (for example, are more politically active and have better self-concepts) than like White externals. This argument is equally plausible to the one we have presented in this paper and would seem to require less extrapolation beyond the data than the alternative we have proposed. On the other hand, most of these arguments (Gurin et. al.,1969; Lao, 1970) have required some manipulation or reworking of the I-E Scale (by factor analyzing it, for example, or by using only one subset of the questions from the test) to prove their points. It would seem legitimate to question the comparability of such research to the original I-E Scale or to the meaning of the internal-external dimension as originally discussed by Rotter. The strength of our argument would seem to be that only one definition of the construct of locus of control is required rather than several. By our hypothesis an "internal" person acts the same regardless of the social setting in which he finds himself. If personality variables are to have any meaning, it would seem that they should act in this way.

Our purpose in writing this paper was to explore the moderating influences of different environments on the relationship between a psychological predictor and educationally relevant variables. By measuring an individual difference variable is different social milieus, we have found that this variable makes strikingly different predictions in different settings. Whatever the reason for these different predictions might be, it would seem that the case for doing such research is strongly supported. Only by specifically looking at situation-personality interactions can the dynamics of such interactions be understood. Our findings have led us to modify the defintion of the individual difference variable that was utilized. Whether this reinterpretation is justified is perhaps less important than the fact that only by such research can progress be made in understanding both situational and personality effects on behavior, and the interaction between the two.

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Table 1

Mean and Standard Deviations of LOC scores, and N's by High School

	Mean LOC	S.D.	Total N	Internal (9 & below)	External (13 & above)
School #1	11.05	3.27	289	86	89
School #2	11.22	4.09	192	55	57
School #3	11.26	4.31	186	59	53

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Table 2

Distribution of Choices for
Occupational Estimation by Internal-
External Ss and Schools

		1	2	3	4	5	
School #1	In	19	14	22	13	18	$\chi^2 = 39.41$ p<.001
	Ex	3	1	13	25	47	
School #2	In	2	6	25	17	5	$\chi^2 = 10.20$ p<.05
	Ex	7	9	19	9	13	
School #3	In	0	0	4	26	29	$\chi^2 = 1.48$ n.s.
	Ex	0	1	5	25	22	

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Table 3

Distribution of Choices for Occupational Preference by Internal-External Ss and Schools

		1	2	3	4	5	
School #1	In	21	13	18	16	18	X^2= 15.60 p<.01
	Ex	5	9	17	23	35	
School #2	In	0	4	19	15	17	X^2= 18.02 p<.01
	Ex	9	9	13	20	6	
School #3	In	0	2	3	8	46	X^2= 4.82 n.s.
	Ex	0	0	5	11	37	

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Table 4

Distribution of Choices for Cognitive Estimation by Internal-External Ss and Schools

		1	2	3	4	5	
School #1	In	7	8	33	19	19	X^2= 16.06 p<.01
	Ex	0	4	26	39	20	
School #2	In	1	3	31	15	5	X^2= 12.74 p<.05
	Ex	8	11	22	10	6	
School #3	In	0	0	16	29	14	X^2= 4.50 n.s.
	Ex	0	1	14	18	20	

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Table 5

Distribution of Choices for Cognitive Preference by Internal-External Ss and Schools

		1	2	3	4	5	
School #1	In	18	19	23	12	14	X^2_m 18.26 p<.01
	Ex	5	7	34	19	24	
School #2	In	2	4	14	20	15	X^2= 2.43 n.s.
	Ex	4	7	18	17	11	
School #3	In	0	0	15	27	17	X^2= 3.48 n.s.
	Ex	3	0	12	21	17	

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Table 6

Distribution of Choices for
Shifts in Level of Aspiration by Internal-
External Ss and Schools

		(Atypical)		(Typical)		
		1	2	4	5	
School #1	In	17	31	24	14	$X^2 = 26.26$ $p<.001$
	Ex	2	14	51	22	
School #2	In	2	1	36	16	$X^2 = 23.26$ $p<.001$
	Ex	7	18	20	12	
School #3	In	1	0	40	18	$X^2 = 1.53$ n.s.
	Ex	1	1	38	13	

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References

Battle, E. S. & Rotter, J. B. Children's feelings of personal control as related to social class and ethnic group. Journal of Personality, 1963, 31, 482-490.

Coleman, J. S., Campbell, E. Q., Hobson, C. J., McPartland, J., Mood, A. M., Wernfeld, F. D. & York, R. L. Equality of Educational Opportunity. Superintendent of Documents, Catalog No. FS5.238: 38001. Washington, D. C.: Government Printing Office, 1966.

Crandall, V. J., Katkousky, W. & Crandall, V. J. Children's beliefs in their own control of reinforcements in intellectual-academic achievement situations. Child Development, 1965, 36, 91-109.

DuCette, J. P. & Wolk, S. Locus of control and extreme behavior. Journal of Consulting and Clinical Psychology, in press.

DuCette, J. P., Wolk, S. & Soucar, E. Atypical patterns in locus of control and maladjustive behavior. Journal of Personality, in press.

Feather, N. T. Change in confidence following success or failure as a predictor of subsequent performance. Journal of Personality and Social Psychology, 1968, 9, 38-46.

Forward, J. R., & Williams, J. R. Internal-external control and black miltancy. Journal of Social Issues, 1970, 26, 75-91.

Gore, P. M. & Rotter, J. B. A personality correlate of social action. Journal of Personality, 1963, 31, 58-64.

Gurin, P., Gurin, G., Lao, R. C. & Beattie, M. Internal-external control in the motivational dynamics of Negro youth. Journal of Social Issues, 1969, 25, 29-63.

Julian, J. W., & Katz, S. B. Internal versus external control and the value of reinforcement. Journal of Personality and Social Psychology, 1968, Vol. 8, No. 1, 89-94.

Lao, R. C. Internal-external control and competent and innovative behavior among Negro college students. Journal of Personality and Social Psychology, 1970, Vol. 14, No. 3, 263-270.

Liverant, S., & Scodel, A. Internal and external control as determinants of decision making under conditions of risk. Psychology Reports, 1960, 7, 59-67.

McGhee, P. E. & Crandall, V. C. Beliefs in internal-external control of reinforcements and academic performance. Child Development, 1968, 39, 91-102.

Phares, E. J. Expectancy changes in skill and chance situations. Journal of Abnormal and Social Psychology, 1957, 54, 339-342.

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Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 1966, 80, No. 1 (Whole No. 609).

Rotter, J. B., & Mulry, R. C. Internal versus external control of reinforcement and decision time. Journal of Personality and Social Psychology, 1965, 2, 598-604.

Ude, L. K. & Vogler, R. E. Internal versus external control of reinforcement and awareness in a conditioning task. The Journal of Psychology, 1969, 73, 63-67.